

Disclosed is a recombinant attenuated coxsackievirus B4 virion which is engineered to contain a heterologous nucleic acid within the open reading frame of its genome, wherein the heterologous nucleic acid encodes a heterologous polypeptide which is expressed by the virion. Specific examples of attenuated coxsackievirus B4 virions suitable for use in the present invention are CB4-P and JVB. In one embodiment the heterologous nucleic acid is inserted into the P1 region of the genome such that the heterologous polypeptide is expressed as a fusion of a viral capsid protein. Methods of use of the recombinant attenuated coxsackievirus B4 virion include inducing an immune response in an individual to the heterologous polypeptide contained therein.

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